

**RULE 1163 -- CONTROL OF VINYL CHLORIDE EMISSIONS**

*(Adopted: 6/7/85)*

**(a) Applicability**

- (1) This rule applies to plants which produce:
  - (A) Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene,
  - (B) Vinyl chloride by any process, and/or
  - (C) One or more polymers containing any fraction of polymerized vinyl chloride.
- (2) The provisions of this rule apply in addition to the provisions of Regulation X, Subpart F.

**(b) Definitions**

For the purpose of this rule, the following definitions shall apply:

- (1) All definitions stated in Regulation X, Subpart F.
- (2) Leak means the detection of vinyl chloride from any location other than a stack vent or designed equipment opening from which vinyl chloride exceeds the background concentration by 10 ppm. Such determination shall be made 5 centimeters from the potential source, using an analyzer employing flame ionization or photodetection methods, which may be portable, and having a sensitivity of at least 1 ppm, or by employing any device or analyzer which the Executive Officer determines is equivalent.
- (3) Background level means the concentration of vinyl chloride in the atmosphere within the plant premises, which is not predominantly influenced by an specific emission point, and which is determined at least three meters upwind of any potential source being inspected.
- (4) Designated Plant means an ethylene dichloride, vinyl chloride, or polyvinyl chloride plant.
- (5) Continuous Stack Monitoring means sampling is done on a continuous basis, with actual samples being taken at least every fifteen minutes.

- (6) Modification means a physical change in, or a change in the method of operation of, a designated plant. For the purposes of this definition:
  - (A) Routine maintenance or repair shall not be considered to be physical changes, and
  - (B) A change in production rate or operating hours shall not be considered to be a change in the method of operation, provided that these increases are not contrary to any existing permit to operate conditions.
- (7) Receiving Vessel is a sealed container used to receive gaseous discharge from vent valves and other equipment. For the purpose of this rule, a monomer recovery vessel shall be considered as a receiving vessel.

(c) Control Requirements

After the effective date of this rule, a person operating a designated plant shall vent the following equipment containing more than 10 ppm of vinyl chloride to air pollution control equipment or other processes which comply with the requirements of paragraph (e) of this rule:

- (1) Vents of or appurtenances venting:
  - (A) Reactors.
  - (B) Storage tanks or surge tanks.
  - (C) Purification vessels or other equipment used for purification.
  - (D) Stripper vessels.
  - (E) Combination reactor-stripper vessels.
  - (F) Mixing, weighing or holding tanks.
  - (G) Monomer recovery equipment.
  - (H) Receiving vessel.
  - (I) Other equipment as required by the Executive Officer.
- (2) Exemption

The provisions of subparagraph (c)(1) shall not apply to equipment which has been purged by liquid displacement and the purge gas vented to air pollution control equipment.

(d) Ambient Air Concentration Requirements

A person operating a designated plant shall not allow the discharge into the atmosphere of any materials which result in ambient concentrations of vinyl chloride which are equal to or greater than ten parts per billion of vinyl chloride, 24-hour average measured at any point beyond the property line of such plant at which persons reside or work. Such measurements shall be performed using methods specified by the California Air Resources Board or any other method approved by the Executive Officer in establishing the Vinyl Chloride Ambient Air Quality Standard. A copy of such methods may be obtained from the District Executive Officer upon request.

(e) Air Pollution Control Equipment

- (1) The owner or operator of the air pollution control equipment specified in this rule shall at all times operate such equipment at an efficiency sufficient to limit the total amount of vinyl chloride in the discharge of all such control equipment at less than 50 grams per hour for polyvinyl chloride plants and less than 50 grams per hour for both ethylene dichloride and vinyl chloride plants. Such 50 grams per hour limit shall apply to the discharge of control equipment serving all polyvinyl chloride plants on a premise. A separate 50 grams per hour limit shall apply to the discharge of control equipment serving any combination of ethylene dichloride and vinyl chloride plants on a premise.
- (2) A continuous stack monitoring system, or equivalent, measuring the flow rate, concentration, and showing the mass flow rate of vinyl chloride discharged from the control equipment shall be installed. Such system shall be approved by the Executive Officer prior to installation. Violations of the standard specified in subparagraph (e)(1), as measured by such systems, shall be reported to the Executive Officer within two hours of such measurements. The records from such monitoring equipment shall be maintained for two years and shall be summarized monthly in the form and manner specified by the Executive Officer. Whenever the stack monitoring system is not in proper operation or out of service, alternate methods shall be used to monitor the vinyl chloride concentrations on an hourly schedule. The Executive Officer may waive the requirements of this subparagraph for those operations for which he deems them unnecessary, and shall notify the District Board of the granting of such waivers in writing.
- (3) Other methods may be employed which reduce vinyl chloride emissions to the same degree of paragraphs (c) and (e)(1) provided that:
  - (A) A control plan is submitted which details the measures which the owner or operator intends to implement, and such plan is approved by the Executive Officer, based on his findings that such measures are equivalent to the measures required by subparagraph (e)(1).

- (B) Applications are submitted for new permits to construct or operate both the basic and control equipment involved regardless of whether modifications or additions are to be made either to the basic or control equipment, or both. Existing permits to operate pertaining to the basic and control equipment as specified above shall be surrendered and cancelled at the time such new permits to construct or operate are issued. Such new permits shall not be effective unless surrender of such existing permits has been made. If such new permits are denied, such existing permits surrendered pursuant to this section shall be re-issued and restored subject to the same conditions which were applicable to the original permits prior to surrender and the provisions of subparagraph (e)(1) shall be applicable. The Executive Officer shall impose those written conditions on such new permits specifying emission limits or other conditions which may be necessary to insure that the emission limitations under this rule are met.

(f) Operational Requirements

- (1) All vent valves or relief devices (except emergency relief valves) on equipment upstream of the stripping operation or post catalysis shall be vented to a receiving vessel.
- (2) Product from reactors which cannot be used in subsequent operations, such as stripping, blending or drying, shall be discharged to a sealed container, which shall be vented to a receiving vessel; or stripped to a degree acceptable to the Executive Officer before discharge.
- (3) Failure of the rupture disc preceding an emergency relief valve which results in a discharge to the atmosphere of vinyl chloride monomer from equipment upstream of a stripping operation shall be deemed a violation of this rule, unless the gaseous discharge is vented to a receiving vessel or air pollution control equipment. An equivalent system which has been approved by the Executive Officer may be substituted for the requirement for venting the discharge of the emergency relief valve. Any discharge to the atmosphere of vinyl chloride from such an equivalent system shall be deemed a violation of this rule.
- (4) Reactors and other equipment upstream from the stripper shall be equipped with automatic pressure reduction systems which will open at a pressure between operating pressure and the emergency pressure relief valve setting. The vapors from such pressure reduction systems shall be directed to a receiving vessel, vapor recovery system, or air pollution control system. The provisions of this subparagraph shall not apply to ethylene dichloride plants.

(g) Management Plan

The owner/operator of a designated plant shall submit to the Executive Officer for his approval, a Management Plan for the reduction of vinyl chloride emissions.

The Management Plan for the reduction of vinyl chloride emissions must include, but is not limited to:

- (1) A plan and schedule to locate and identify all sources of vinyl chloride emissions which might contribute to exceedences of the ambient concentration requirements of paragraph (d).
- (2) An outline of a training program to routinely instruct employees, including supervisors, on methods to prevent vinyl chloride emissions.
- (3) A method of screening operating records or other data to detect equipment operators who may periodically cause excessive vinyl chloride emissions because of misoperation of equipment.
- (4) An outline of a special training program or other measures to eliminate the emissions, cited in subparagraph (g) (1).

After approval of the Management Plan, all applicable operations shall be conducted according to said Plan.

(h) Leaks

- (1) Except as provided in subparagraph (h)(5), a person shall not use any compressor, flange, pump, valve, storage container, process vessels, or other equipment containing or using vinyl chloride in a designated plant unless such equipment is free of vinyl chloride leaks.
- (2) Except as provided in subparagraph (h)(5), a person shall not use any rail tank cars, tank trucks, or shipping containers used to transport vinyl chloride unless such equipment is free of vinyl chloride leaks.
- (3) All flanges, pumps, valves, storage containers, and process vessels shall be inspected for leaks within 90 days after the effective date of this subparagraph. Thereafter, all compressors, pumps, and valves shall be inspected each three months following such initial inspections. All flanges, reactors, and process equipment shall be inspected each six months following such initial inspections. All inspections shall be the responsibility of the plant operator, and shall include checks for possible leakage as defined in subparagraph (b)(2).
- (4) All detected leaks by the operator shall be recorded in an inspection record along with the date and inspector's initials. Such records shall be maintained for two years.

- (5) Any detected leaks by the operator shall be eliminated within 24 hours of detection.
- (6) Ninety days after the effective date of this subparagraph, except as provided in subparagraph (h)(5), any leaks detected by the District shall be deemed a violation of this rule and shall be repaired and eliminated within 24 hours of detection.

(i) **Ambient Air Monitoring**

A person operating a designated plant shall comply with the following requirements for ambient air monitoring facilities.

- (1) Provide and operate up to four air monitoring stations to continuously measure and record ambient concentrations of vinyl chloride in the vicinity of such plants. The exact number and location of such monitoring stations shall be approved by the Executive Officer; and
- (2) Provide and operate up to four additional air monitoring stations to continuously measure and record ambient concentrations of vinyl chloride in populated areas near such plants. The exact number and location of such monitoring stations shall be approved by the Executive Officer.
- (3) Calibrate and maintain the required ambient air monitoring stations in accordance with procedures specified in paragraph (d);
- (4) Keep the records from the required air monitoring stations for a period of two years. The data from such records shall be summarized monthly and shall be submitted in the manner and form specified by the Executive Officer.
- (5) Breakdowns of the vinyl chloride ambient air monitoring equipment shall be reported to the Executive Officer within 12 hours after the time such breakdowns are first found. Non-operation or faulty operation of such equipment for longer than 96 hours shall be deemed a violation of this rule.
- (6) Measure meteorological data consisting of wind direction and wind speed. Such data shall be summarized and submitted in the form and manner specified by the Executive Officer. The original records shall be retained for a period of two years.
- (7) A person operating a designated plant which produces ten million pounds or less of vinyl chloride polymer, in any year, is exempt from the provision of subparagraph (i) (2).

(j) New or Modified Plants

After May 1, 1980, a person shall not build a new designated plant or modify an existing designated plant unless that person demonstrates to the Executive Officer that the ambient air quality will not exceed the California Vinyl Chloride Ambient Air Standards as a result of any emissions from a new plant or any increase in emissions from a modified plant.

(k) Exemptions

- (1) A designated plant is exempt from the provisions of this rule, except paragraphs (g), and (h) if the plant operator can show to the satisfaction of the Executive Officer that the plant has not exceeded the provisions of paragraph (d) for a period of six months continuously, and maintain at least one air monitoring station as required by subparagraph (i) (1). A designated plant which produces ten million pounds or less of vinyl chloride polymer, in any one year, is exempt from the air monitoring station requirements of this subparagraph.

Such exemption will be granted in writing by the Executive Officer. After obtaining a written exemption from the Executive Officer, if a designated plant violates the provisions of paragraph (d), such written exemption from the Executive Officer shall be void, unless it is shown that such violations are caused by minor, non-periodic and infrequent breakdowns, as determined by the Executive Officer.

- (2) This rule does not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 m<sup>3</sup> (50 gallons).

(l) The provisions of this rule shall be effective according to the compliance schedule stated below:

<u>Subparagraph</u>	<u>Effective Date</u>
(g) Management Plan	90 days from the adoption of this rule.
(h) Leaks	60 days from the adoption of this rule.
(c) Control Requirements	One year from the adoption of this rule.
(d) Ambient Air Concentration Requirements	One year from the adoption of this rule.
(e) Air Pollution Control Equipment	One year from the adoption of this rule.
(f)(1), (f)(2), (f)(3)	One year from the adoption of this rule.
(i) Ambient Air Monitoring	One year from the adoption of this rule.

- (2) Within one year from the date of adoption of this rule, a person operating a designated plant shall install and thereafter operate pressure indicating and recording instruments (or equivalent as approved by the Executive Officer) monitoring the discharge of emergency relief valves and manual vent valves located on equipment upstream of the stripping operation. The data from such instrument shall be summarized monthly and shall be submitted to the Executive Officer in the form and manner specified. The records from such instruments shall be maintained for two years.
- (3) The provisions of subparagraph (f)(4) shall not be applicable unless all of the following occurs:
  - (A) Twelve months have passed since the date of adoption of this rule and thereafter, two violations per month of the ambient air concentration requirement of paragraph (d) have occurred in two consecutive months; and
  - (B) The Executive Officer has determined that such violations of the concentration requirement were caused by venting of vinyl chloride from emergency relief valves, or manual vent valves, located on equipment upstream of the stripping operation; and
  - (C) The Executive Officer gives written notice of such determination, along with a specification of the basis for his determination, and a description of the equipment to be subject to the requirements of subparagraph (f)(4) to the owner or operator of the source(s) determined to be responsible for such violations.
- (4) All provisions of subparagraph (f)(4) applicable to the equipment specified by the Executive Officer in his notice of determination shall be complied with no later than one year from the date of the Notice of Determination.

(m) Severability

If any portion of this rule shall be found to be unenforceable, such finding shall have no effect on the enforceability of the remaining portions of the rule, which shall continue to be in full force and effect.

[SIP: Not SIP.]